Appl. No.: 10/709,681
Amdt. Dated: 9/10/2006
Reply to Office action of: 06/22/2006

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (currently amended) Automobile management system using two batteries comprising:
a primary battery (B1) designed to power a primary service network (1) connected to one of its terminals (2), to which a generator (G) is also connected~~,~~ ;
a second battery (B2) designed to power a secondary network (3) essentially assigned to start-up functions;
and a BCO2 switch managed by a control unit or module (5);
~~which~~ whereby, depending on the status of the charges of both batteries (B1) and (B2) and the charge demands of ~~the mentioned~~ said networks (1) and (3), enables current flow between the two networks (1) and (3) in any direction, ~~its characterized by the use of~~ using a unidirectional current flow device (4) that can bridge permanently ~~the aforementioned~~ said BCO2 switch located between ~~the~~ said two networks (1) and (3) ~~and~~ respectively powered by the mentioned batteries (B1) and (B2), ~~whose~~ said unidirectional current flow device (4) ~~provides~~ providing current flow towards the start-up battery (B2) smaller than the current flow through the BCO2 switch~~,~~ when it is closed, and also smaller than the current from generator (G) to battery (B1).

Claim 2 (currently amended) System, according to claim 1, ~~characterized because~~ wherein said control unit (5) includes means to detect the condition status of both batteries (SOH).

Claim 3 (currently amended) System, according to claim 1, ~~characterized because~~ wherein said unidirectional flow device (5) connected between the two networks (1) and (3) is a power barrier diode.

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Claim 4 (currently amended) System, according to claim 2, ~~characterized because~~ wherein the control module (5) controlling the connection / disconnection of ~~the mentioned~~ said BCO switch, includes a microcontroller, a condition status sensor (SOH) and a charge status sensor (SOC).

Claim 5 (currently amended) System, according to claim 1, ~~characterized because~~ wherein ~~the mentioned~~ said controllable switch that connects the battery (B1) and the network (1) with the battery (B2) and network (3) ~~is~~ comprising a switch with BCO (Battery Cut Off) disconnection functions from the battery (B1).

Claim 6 (currently amended) Management method of a car with two batteries, ~~which comprises~~ comprising: a first battery (B1) designed to power a first service network (1) connected to one of its terminals (2), to which a generator (G) is also connected~~,~~ ;
a second battery (B2) designed to power a second network (3) essentially assigned to start-up functions;
and a BCO2 switch managed by a control unit or module (5);
~~which~~ whereby, depending on the status of the charges of both batteries (B1) and (B2) and the charge demands C_1 and C_2 of ~~the mentioned~~ said networks (1) and (3), enables current flow between the two networks (1) and (3) in any direction, characterized by:
performing a permanent monitoring of the SOC of batteries (B1) and (B2) and the charge demands of C_1 and C_2 and provide an actuation ~~on the mentioned~~ of said switch BCO2, allowing the connection of one or both batteries B1 and B2 to both networks (1) and (3) with energy transfer between them; and
providing permanent unidirectional current flow from network (1) containing battery B1 to network (2), which includes battery B2 with a current flow smaller than the one circulating through ~~the mentioned~~ said BCO2 switch, when it is closed, and also smaller than the feeding current to battery (B1) from generator (G).

Claim 7 (currently amended) Method, according to claim 6, ~~characterized because~~ wherein the monitoring of the charge status SOC of the a) stage, is complemented with the monitoring of the condition status of the battery.

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Claim 8 (original) Method, according to claim 6, ~~characterized because~~ wherein said b) stage for providing a permanent unidirectional current flow from network (1) to network (~~2~~ 3) is made across a unidirectional current flow device such as a power diode (4).